Enter a chemical name, CAS Number, molecular formula, or molecular weight

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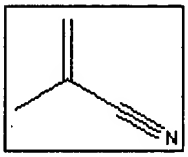
Methyl Acrylonitrile [126-98-7]

Synonyms: methacrylonitrile; 2-Methyl-2-Propenenitrile; Isopropene Cyanide; Isopropenylcarbonitrile; alpha-Methylacrylonitrile; 2-cyanopropene-1; 2-methylpropenenitrile; 2-cyanopropene; MAN; Methacrylonitrile ;

C_4H_5N

67.0902



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ACX Number	X1003173-1	CAS RN	126-98-7
Melting Point (°C)	-35.8	Density	0.8
Boiling Point (°C)	90.3	Vapor Density	
Refractive Index	1.4002	Vapor Pressure	
Evaporation Rate		Water Solubility	soluble. 2.5 g/100 mL
Flash Point (°C)	12	EPA Code	U152
DOT Number	3079	RTECS	UD1400000
Comments	colorless liquid with acrid odor. LACHRYMATOR.		

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Chemical Online Order

Available Chemicals Exchange

Information about this particular compound

Health

ATSDR Internet HazDat Site Contaminant Query

Information about this particular compound

CHEMICALS STUDIED through NIEHS's Reproductive Toxicology Group

NTP Chemical Health and Safety Data

Information about this particular compound

RAIS Nonradionuclides Toxicity Values

International Toxicity Estimates for Risk

Information about this particular compound

Hazardous Chemicals Database at the University of Akron

Information about this particular compound

8(e) TRIAGE Chemical Studies Database

UMCP Partial list of acute toxins

List of Hazardous Chemicals, Toxic & Reactives

Australian Atmospheric Exposure Standards

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Misc

Protocol Analytical Supplies, Inc. Single-component standards

Physical Properties

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ABCR GmbH&Co KG

Methacrylonitrile

Organic Compounds Database

Proton NMR Spectral Molecular Formula Index

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DuPont TYVEK® Protective Apparel Information Service

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Pollution Prevention Progress Measurement Method (3P2M) Hazard Ranking

Galactic Industries Corporation Spectral Database

FTIR SPECTRUM of METHACRYLONITRILE

Genium's Chemical Container Label Database

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NFPA Chemical Hazard Labels

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Spectrum Laboratories, Inc.

Information about this particular compound

Regulations

NASA Department of Environmental Services List Of Lists of Regulated Chemicals

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Information about this particular compound

University of California-Riverside list of compounds that must be reported

California EPA List of Lists

List of Regulated Substances Under the LDEQ Chemical Accident Prevention Program

Substances in IRIS (Integrated Risk Information System) (main EPA site)

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Title III List of Lists

Regulated Substances under Section 112(r) of the Clean Air Act

Current List of Toxics Release Inventory Chemicals

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Enter a chemical name, CAS Number, molecular formula, or molecular weight

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Substructure Query with Plug-In or Substructure Query with Java

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L13: Entry 1 of 10 File: USPT Sep 11, 2001

DOCUMENT-IDENTIFIER: US 6287723 B1
TITLE: Alkaline secondary battery having an anode comprising a non ionic polymer binder

Abstract Paragraph Left (1):
An alkaline secondary battery comprising an electrolyte such as aqueous solution of potassium hydroxide, at least one cathode electrode, at least one anode electrode having an anode active material layer, and a separator such as non-woven fabric between the anode electrode and the cathode electrode, in which the anode active material layer containing an anode active material such as a hydridable alloy or a cadmium alloy, and an anode binder which includes a nonionic polymer produced by emulsion polymerization of a nonionic monomer in the presence of a nonionic surfactant, and in which the electrolyte essentially surrounds the cathode electrode and the anode electrode.

Brief Summary Paragraph Right (2):
An alkaline secondary battery comprises an electrolyte, at least one cathode electrode and at least one anode electrode, in which the electrolyte at least partially surrounds the cathode electrode and the anode electrode. Also there is optionally a separator which lies between the cathode electrode and the anode electrode. The cathode electrode has a cathode metallic collector and a cathode active material layer bound thereon. The cathode active material layer is formed by binding, with a cathode binder, a cathode active material such as nickel hydroxide or nickel oxy-hydroxide, a conductive material such as carbon, and additives such as cobalt powder. The anode electrode has an anode metallic collector such as punched metal, porous metallic plate, foamed metallic plate or sintered netlike metal fibeir plate, and an anode active material layer bound thereon. The anode active material layer is formed by binding, with an anode binder, an anode active material such as a hydridable alloy or a cadmium alloy, and a conductive material such as carbon, nickel powder or the like. The anode electrode is generally produced by blending the anode active material, the conductive material, the anode binder and water to obtain a paste, followed by spreading the paste on the anode metallic collector, and then drying it. It is necessary that the anode binder is a polymer capable of strongly binding the collector, the anode active material and the conductive material.

Brief Summary Paragraph Right (9):
In one aspect of the present invention, there is provided an alkaline battery comprising an electrolyte, at least one cathode electrode and at least one anode electrode having an anode collector and an anode active material layer on the anode collector, in which the anode active material layer contains an anode active material and an anode binder which includes a nonionic polymer produced by emulsion polymerization of at least one nonionic monomer in the presence of a nonionic surfactant, and the cathode electrode and the anode electrode are essentially surrounded by an electrolyte.

Brief Summary Paragraph Right (19):
A polymer rich in an ionic monomer, which is ionizable, such as the unsaturated mono-carboxylic acid monomer which include acrylic acid, methacrylic acid and the like, are not included as part of the present invention because the ionic monomer has such a high electrolytic dissociation that an undesirable reaction with the electrolyte occurs slowly. As such the performance of binder is undesirably reduced. When the ionic monomer is used to give the desirable property to the polymer as the binder, the amount of the ionic monomer, based on the total amount of monomer, is generally not more than 20% by weight, preferably not more than 10% by weight, more preferably not more than 5% by weight.

Brief Summary Paragraph Right (45):

The electrolyte may be an aqueous solution of potassium hydroxide, an aqueous solution of potassium hydroxide and sodium hydroxide, an aqueous solution of potassium hydroxide and lithium hydroxide, or an aqueous solution of potassium hydroxide, sodium hydroxide and lithium hydroxide.

Brief Summary Paragraph Right (46):
The secondary battery comprises the electrolyte, the cathode electrode and the anode electrode, in which the cathode electrode and the anode electrode are essentially surrounded by the electrolyte. The secondary battery may further comprise a separator between the cathode electrode and the anode electrode. The secondary battery may be produced by ordinary methods such as by enclosing the electrolyte, the cathode electrode and the anode electrode in a metallic cell case.

Detailed Description Paragraph Right (10):
A separator made of Nylon non-woven fabric was held between the cathode electrode and the anode electrode. The layered combination of the anode electrode, the separator and the cathode electrode was rolled into a scroll. The scroll was placed in a closed-end cylindrical cell case having the size of AA which served as an anode electrode terminal, and 31% aqueous solution of potassium hydroxide as the electrolyte was poured in the cell case, followed by fitting a battery cover as a cathode electrode terminal to the top of the cell case, to obtain a sealed cylindrical battery having a rated capacity of 1000 mAh.

Other Reference Publication (1):
Japanese Abstract: JPA9063586, Mar. 7, 1997, "Orgaganic Electrolyte Secondary Battery".

CLAIMS:

1. An alkaline secondary battery, comprising:

an electrolyte;

at least one cathode electrode and

at least one anode electrode having an anode collector and

an anode active material layer bound on the anode collector,

wherein the anode active material layer comprises

an anode active material and

an anode binder which includes a nonionic polymer having an electric conductivity of not more than 2000 .mu.S/cm, wherein the nonionic polymer is produced by emulsion polymerization of at least one nonionic monomer in the presence of a nonionic surfactant,

wherein the cathode electrode and the anode electrode are at least partially surrounded by the electrolyte;

wherein the nonionic polymer is other than polytetrafluoroethylene; and

wherein when the nonionic polymer is a polyacrylate, the polyacrylate is produced by emulsion polymerization of an acrylic acid ester.

21. An alkaline secondary battery, comprising:

an electrolyte;

at least one cathode electrode and

at least one anode electrode having

an anode collector and

an anode active material layer bound on the anode collector,

wherein the anode active material layer comprises

an anode active material and

an anode binder which includes a nonionic polymer having an electric conductivity of not more than 500 .mu.S/cm,

wherein the cathode electrode and the anode electrode are at least partially surrounded by the electrolyte.

22. The alkaline secondary battery according to claim 1, wherein the anode binder contains a nonionic polymer produced by the emulsion polymerization of at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, isopropyl acrylate, n-butyl acrylate, isobutyl acrylate, n-amyl acrylate, isoamyl acrylate, n-hexyl acrylate, 2-ethylhexyl acrylate, hydroxypropyl acrylate, lauryl acrylate, methyl crotonate, ethyl crotonate, propyl crotonate, butyl crotonate, isobutyl crotonate, n-amyl crotonate, isoamyl crotonate, n-hexyl crotonate, 2-ethylhexyl crotonate, hydroxypropyl crotonate, methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, isobutyl methacrylate, tert-butyl methacrylate, 2-ethylhexyl methacrylate, lauryl methacrylate tridodecyl methacrylate, stearyl methacrylate, 1,3-butadiene, isoprene, 2,3-dimethyl butadiene, piperirene, styrene, alpha-methyl styrene, beta-methyl styrene, p-tert-butyl styrene, chlorostyrene, acrylonitrile, methacrylonitrile, acrylamide, N-methylol acrylamide, N-butoxymethyl acrylamide, methacrylamide, N-methylol methacrylamide, N-butoxymethyl methacrylamide, glycidyl acrylate, glycidyl methacrylate, allyl glycidyl ether, diethylaminoethyl methacrylate, diethylaminoethyl methacrylate, methoxy poly-ethyleneglycol mono-methacrylate.

23. The anode electrode according to claim 4, wherein the anode binder contains a nonionic polymer produced by the emulsion polymerization of at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, isopropyl acrylate, n-butyl acrylate, isobutyl acrylate, n-amyl acrylate, isoamyl acrylate, n-hexyl acrylate, 2-ethylhexyl acrylate, hydroxypropyl acrylate, lauryl acrylate, methyl crotonate, ethyl crotonate, propyl crotonate, butyl crotonate, isobutyl crotonate, n-amyl crotonate, isoamyl crotonate, n-hexyl crotonate, 2-ethylhexyl crotonate, hydroxypropyl crotonate, methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, isobutyl methacrylate, tert-butyl methacrylate, 2-ethylhexyl methacrylate, lauryl methacrylate tridodecyl methacrylate, stearyl methacrylate, 1,3-butadiene, isoprene, 2,3-dimethyl butadiene, piperirene, styrene, alpha-methyl styrene, beta-methyl styrene, p-tert-butyl styrene, chlorostyrene, acrylonitrile, methacrylonitrile, acrylamide, N-methylol acrylamide, N-butoxymethyl acrylamide, methacrylamide, N-methylol methacrylamide, N-butoxymethyl methacrylamide, glycidyl acrylate, glycidyl methacrylate, allyl glycidyl ether, diethylaminoethyl methacrylate, diethylaminoethyl methacrylate, methoxy poly-ethyleneglycol mono-methacrylate.

24. The method according to claim 14, wherein the anode binder contains a nonionic polymer produced by the emulsion polymerization of at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, isopropyl acrylate, n-butyl acrylate, isobutyl acrylate, n-amyl acrylate, isoamyl acrylate, n-hexyl acrylate, 2-ethylhexyl acrylate, hydroxypropyl acrylate, lauryl acrylate, methyl crotonate, ethyl crotonate, propyl crotonate, butyl crotonate, isobutyl crotonate, n-amyl crotonate, isoamyl crotonate, n-hexyl crotonate, 2-ethylhexyl crotonate, hydroxypropyl crotonate, methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, isobutyl methacrylate, tert-butyl methacrylate, 2-ethylhexyl methacrylate, lauryl methacrylate tridodecyl methacrylate, stearyl methacrylate, 1,3-butadiene, isoprene, 2,3-dimethyl butadiene, piperirene, styrene, alpha-methyl styrene, beta-methyl styrene, p-tert-butyl styrene, chlorostyrene, acrylonitrile, methacrylonitrile, acrylamide, N-methylol acrylamide, N-butoxymethyl acrylamide, methacrylamide, N-methylol methacrylamide, N-butoxymethyl methacrylamide, glycidyl acrylate, glycidyl methacrylate, allyl glycidyl ether, diethylaminoethyl methacrylate, and diethylaminoethyl methacrylate, methoxy poly-ethyleneglycol mono-methacrylate.

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L13: Entry 3 of 10 File: USPT Sep 12, 2000

DOCUMENT-IDENTIFIER: US 6117969 A
TITLE: Polycarbonate resin compositions

Brief Summary Paragraph Right (23):
Furthermore, the present inventors have found that, when the polycarbonate resin composition contains an antistatic polymer selected from a polyetheramide, a polyetherester, a polyetheresteramide and a polyamidelmide elastomer, the resin composition has high antistatic properties, in addition to high impact resistance and high moldability. The present inventors have further found that, when the polycarbonate resin composition contains both an antistatic polymer and an organic or inorganic electrolyte, the antistatic properties of the polycarbonate resin composition become high.

Detailed Description Paragraph Right (17):
10. The resin composition according to item 9 above, which further comprises (E) 0.01 to 10 parts by weight, relative to 100 parts by weight of the total of component (A) and component (B), of at least one electrolyte selected from the group consisting of an organic electrolyte and an inorganic electrolyte.

Detailed Description Paragraph Right (82):
Examples of vinyl compounds graft-copolymerizable with a rubber polymer particle used in the present invention include aromatic vinyl compounds, such as styrene, .alpha.-methylstyrene and para-methylstyrene; alkyl (meth)acrylates, such as methyl methacrylate, methyl acrylate, butyl acrylate and ethyl acrylate; (meth)acrylic acids, such as acryliz acid and methacrylic acid; vinyl cyanide compounds, such as acrylonitrile and methacrylonitrile; .alpha., .beta.-unsaturated carboxylic acids, such as maleic anhydride; maleimide compounds, such as N-phenylmaleimide, N-methylmaleimide and N-cyclohexylmaleimide; and glycidyl group-containing compounds, such as glycidyl methacrylate. As the vinyl compound graft-copolymerizable with a rubber polymer particle, preferred are aromatic vinyl compounds, alkyl (meth)acrylates, vinyl cyanide compounds and maleimide compounds. More preferred are styrene, acrylonitrile, N-phenylmaleimide and butyl acrylate.

Detailed Description Paragraph Right (158):
By incorporating component (E), namely, an organic electrolyte and/or an inorganic electrolyte, into the poloycarbonate resin composition of the present invention in addition to the above-mentioned antistatic polymer (D) as an optional component, the antistatic properties of the resin composition can be remarkably improved.

Detailed Description Paragraph Right (159):
Examples of such organic electrolytes include organic compounds having an acidic group and metal salts thereof, organic ammonium salts and organic phosphonium salts. Examples of organic compounds having an acidic group and metal salts thereof include aromatic sulfonic acids, such as dodecylbenzenesulfonic acid, p-toluenesulfonic acid, dodecylphenyletherdisulfonic acid, naphthalenesulfonic acid, a condensate of naphthalenesulfonic acid and formalin, and a polystyrenesulfonic acid; alkylsulfonic acids, such as laurylsulfonic acid; organic carboxylic acids, such as stearic acid, lauric acid and a polyacrylic acid; organic phosphoric acids, such as diphenyl phosphite and diphenyl phosphate; and alkali metal salts and alkaline earth metal salts thereof.

Detailed Description Paragraph Right (162):
Examples of inorganic electrolytes include AgNO.sub.3, BeSO.sub.4, CaCl.sub.2, Ca(NO.sub.3).sub.2, CdCl.sub.2, Cd(NO.sub.3).sub.2, CoCl.sub.2, CrCl.sub.2, CsCl, CuCl.sub.2, Cu(NO.sub.3).sub.2, CuSO.sub.4, FeCl.sub.2, KBr, KH.sub.2 PO.sub.4, KSCN,

KNO.sub.3, LiCl, LiOH, LiNO.sub.3, MgCl.sub.2, Mg(NO).sub.3).sub.2, MgSO.sub.4, MnCl.sub.2, MnSO.sub.4, NH.sub.4 Cl, NH.sub.4 NO.sub.3, (NH.sub.4).sub.2 SO.sub.4, NaBr, Na.sub.2 CO.sub.3, NaH.sub.2 PO.sub.4, NaNO.sub.3, NiSO.sub.4, Pb(NO.sub.3).sub.2, PrCl.sub.3, RbCl, RbNO.sub.3, Zn(NO.sub.3).sub.2 and ZnSO.sub.4.

Detailed Description Paragraph Right (165):
When the polycarbonate resin composition of the present invention further comprises at least one electrolyte (E) selected from the group consisting of an organic electrolyte and an inorganic electrolyte, the amount of the electrolyte (E) is 0.01 to 10 parts by weight, preferably 0.1 to 5 parts by weight, relative to 100 parts by weight of the total of component (A) and component (B). When the amount of component (E) in the resin composition is less than 0.01 part by weight, relative to 100 parts by weight of the total of component (A) and component (B), the resin composition cannot exhibit satisfactory antistatic properties. On the other hand, when the amount of component (E) in the resin composition is more than 10 parts by weight, problems arise, such as mechanical strength lowering, corrosion of a mold, occurrence of mold deposit and the like.

Detailed Description Paragraph Center (11):
Electrolyte

CLAIMS:

10. The resin composition according to claim 9, which further comprises (E) 0.01 to 10 parts by weight, relative to 100 parts by weight of the total of component (A) and component (B), of at least one electrolyte selected from the group consisting of an organic electrolyte and an inorganic electrolyte.